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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,568	09/19/2003	William F. McNally	7668-4	8606

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EXAMINER

BAREFORD, KATHERINE A

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,568

Applicant(s)

MCNALLY ET AL.

Examiner

Katherine A. Bareford

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) 4,5 and 14-19 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3 and 6-13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment of October 6, 2006 has been received and entered.

With the amendment, claims 4-5 and 14-19 remain withdrawn and claims 1-3 and 6-13 are pending for examination.

Election/Restrictions

2. This application contains claims 4-5 and 14-19 drawn to an invention nonelected with traverse in the reply filed January 27, 2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3 and 6-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 has been amended in part c) section 1) to require contacting the pre-metallized, organic substrate with "a complexer, such as an aqueous Na₄EDTA solubiton, for a controlled rate of release of silver and to prevent a rapid bath decomposition". Applicant has provided no indication of where in the originally filed application there is basis for this amendment, and after a review of the originally filed application, the Examiner finds that the amendment contains new matter. (1) First, the contacting with "a complexer" which can be Na₄EDTA solution but does not have to be, is new matter. In the application as originally filed, applicant only described the use of Na₄EDTA solutions, see paragraphs [00011] and [00021] – [00022]. There is absolutely no discussion of using any other "complexer". Thus, applicant has broadened the scope of the invention by claiming the genus "complexer" when only the species of Na₄EDTA solution is described. As discussed in MPEP 2163.05:

The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species. A "representative number of species" means that the species which are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. >The disclosure of only one species encompassed within a genus adequately describes a claim directed to that genus only if the disclosure "indicates that the patentee has invented species sufficient to constitute the gen[us]." See *Enzo Biochem*, 323 F.3d at 966, 63 USPQ2d at 1615. "A patentee will not be deemed to have invented species sufficient to constitute the genus by virtue of having disclosed a single species when ... the evidence indicates ordinary artisans could not predict the operability in the invention of any species other than the one disclosed." In re *Curtis*, 354 F.3d 1347, 1358, 69 USPQ2d 1274, 1282 (Fed. Cir. 2004) (Claims directed to PTFE dental floss with a friction-enhancing coating were not supported by a disclosure of a microcrystalline wax coating where there

was no evidence in the disclosure or anywhere else in the record showing applicant conveyed that any other coating was suitable for a PTFE dental floss.).

In this case, the broader genus of "complexer" is not supported, as applicant does not even indicate that the purpose of the Na₄EDTA solution is to act as a complexer. (2) as to the claiming that the use of the complexer is "for a controlled rate of release of silver and to prevent a rapid bath decomposition", the application as originally filed simply does not support such a requirement. There is no indication as to how or that the Na₄EDTA solution has any effect on release of silver or rapid bath decomposition.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13, line 2, "the Na₄EDTA solution" lacks antecedent basis, because as now claimed in parent claim 1, what is supported is "a complexer".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 2 and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabara et al (US 5302415) in view of Arcilesi et al (US 4204013) and Sanders et al (US 4716055).

Referring to claim 1, Gabara et al. discloses a method for coating an organic substrate such as aramid fibers with metal (column 2, lines 5-20), which can include cleaning the fibers before treatment (column 6, lines 20-30). Gabara et al then teaches etching the fibers by placing them in a sulfuric acid solution (column 3, line 35 through column 4, line 15). To coat the fibers with silver, they can then be sensitized by placing in a solution comprising stannous chloride and inorganic HCL acid (column 5, lines 1-

10), then the substrate was placed in a silver salt solution which inherently deposits silver oxide on the organic substrate as no reducing agent is present and the solution further includes ammonium hydroxide as a complexing agent (column 5, lines 1-20 and column 8, lines 40-65), the solution then has a reducing agent added which acts to reduce the silver oxide to metallic silver (column 5, lines 1-20 and column 8, lines 39-64).

(1) Gabara et al does not disclose contacting the pre-metallized organic substrate with Na₄EDTA solution as a complexer prior to placing the substrate into the electroless silver bath. However, Arcilesi et al. discloses that an aqueous Na₄EDTA solution treatment prior to electroless plating plastic substrates and after etching and sensitization in a stannous chloride solution acts to accelerate the deposition during the electroless process and make the substrate more receptive to electroless plating (abstract, column 3 lines 6-45, example 1). This solution is a complexer solution as Arcilesi et al teaches that the solution contains an amine "present in an amount effective to ^ccomplex substantially all of any contaminating reducible metal ions present" (column 3, lines 15-20 and see column 4, lines 55-60). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gabara et al. to include an acceleration and complexing step as taught by Arcilesi et al. with an expectation that this step will accelerate the electroless deposition and make the substrate more receptive to the plating process. While Arcilesi et al does not teach that the use of the complexer solution provides for a controlled rate of release of silver and prevents rapid bath decomposition, the fact that applicant has recognized another

advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious.

See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

(2) Gabara et al also does not disclose the cleaning process would be a scouring process. However, Sanders et al teaches a plating process for organic fibers that includes the steps of acid etching, sensitizing in stannous chloride and HCl, and electroless plating (column 5, line 50 through column 6, line 25). The plating can be of silver (column 11, lines 5-10). Sanders et al teaches that prior to the etching, a cleaning process is provided for the fibers where the fibers are cleaned by scouring (column 5, lines 60-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gabara et al to clean by scouring prior to the etching step to provide a desirable cleaning process, because Gabara et al teaches that it is known to clean the fibers prior to etching in a plating process and Sanders et al teaches that a desirable cleaning process for fibers prior to etching in a plating process is by scouring.

Referring to claim 2, Gabara et al. discloses that the substrate is polymeric yarn or fiber (example 3).

Referring to claim 6, Sanders et al. discloses that the scouring comprises washing the substrate an aqueous solution (column 5, lines 60-65).

Referring to claim 7, Gabara et al. discloses that the tin salt is stannous chloride (example 3).

Referring to claim 8, Gabara et al. discloses that the tin solution comprises an inorganic acid, hydrochloric acid (example 3).

Referring to claim 9, Gabara et al. discloses that the silver salt is silver nitrate and the complexing agent is ammonia hydroxide.

Referring to claims 10 and 11, Gabara et al. discloses that the reducing agent is formaldehyde (example 3)

Referring to claim 12, Gabara et al. discloses that the pre-metallization solution omits a water soluble solvent (example 3).

Referring to claim 13, Gabara et al. discloses that the pre-metallization solution and the Na₄EDTA solution do not contain a surfactant (example 3). However, the silver plating solution contains a wetting agent. However, Arcilesi et al. discloses that after the acceleration treatment an electroless plating process is performed that excludes a wetting agent (example 1). Accordingly, one of ordinary skill in the art would find it obvious that when employing the accelerating step to render the substrate more receptive to the electroless plating that a surfactant is no longer necessary to help increase the plating rate.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gabara et al. in view of Arcilesi et al. and Sanders et al. in further view of Rheaume (US Patent No. 4,312,913).

Referring to claim 3, Gabara et al. in view of Arcilesi et al. and Sanders et al disclose all of the features of the claim as discussed above except they do not disclose weaving the fiber into a textile. However, Rheume teaches that using metallized yarns and weaving them together are useful for heat conduction paths for the efficient transferring of heat from a substrate (abstract). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Gabara et al. in view of Arcilesi et al. and Sanders et al. to use the metallized yarns as a woven heat transfer device as suggested by Rheume as this is a suitable end product for such metallized yarns.

Response to Arguments

11. Applicant's arguments with respect to claims 1-3 and 6-13 have been considered but are moot in view of the new ground(s) of rejection.

As to the amendment to the claims to provide that the scouring of the substrate cleans the surface, the Examiner has provided the new reference to Sanders et al to show that cleaning by scouring is conventional in the art. The Examiner notes that Gabara et al and Arcilesi et al both indicate that the substrate can be cleaned prior to the etching and plating process (Gabara et al – column 6, lines 20-30, Arcilesi et al – column 3, lines 50-70). As to the argument that the high temperature of sulfuric acid of Gabara et al would melt the substrate of the claimed invention, the Examiner disagrees.

Applicant only claims a substrate of "organic material" and Gabara et al specifically teaches an organic substrate that is not destroyed by such a treatment.

As to the arguments by applicant that Arcilesi et al does not provide the use of a complexer as claimed, the Examiner disagrees. While Arcilesi et al provides that the Na₄EDTA solution is used as an accelerator, it specifically provides complexing action, as discussed in the rejection above and at column 3, lines 15-20 and column 4, lines 55-60 of Arcilesi et al. While applicant has claimed that the complexer treatment provides "for a controlled rate of release of silver and to prevent a rapid bath decomposition" the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Here, the substrate in Arcilesi et al has been treated with a Na₄EDTA solution that meets all the requirements of applicant's claimed complexer and thus would result in the controlled rate of release and rapid bath decomposition prevention as well as the acceleration. As to applicant's arguments that the plating solution of Gabara et al is at 5 degrees C, while the accelerator solution of Arcilesi et al and a quoted textbook is at a much higher temperature range, thus providing a contradiction from the present invention and each other, the Examiner disagrees. Even in the example of Gabara et al where the plating solution is at 5 degrees C, Gabara et al provides that the drying conditions after etching and before plating can be at a variety of temperatures, including room temperature, 80 degrees C, and 155 degrees C. Thus,

V/b Gabara et al indicates that different steps in the process can be performed at different temperatures. Therefore, even in the step of contacting with the Na₄EDTA solution is at a higher temperature (Arcelisi et al describes ~~4~~ room temperature to 160 degrees F, column 3, lines 30-35) then the subsequent plating process, this is not contradicted by the primary reference to Gabara et al.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KATHERINE BAREFORD
PRIMARY EXAMINER